

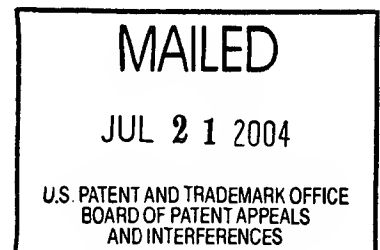
**UNITED STATES PATENT AND TRADEMARK OFFICE**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

*Ex parte* STEPHEN RICHARD HANSON and EDWARD JAMES RADLEY

Appeal No. 2003-1628  
Application No. 09/097,468

ON BRIEF



Before HAIRSTON, BARRETT, and BARRY, *Administrative Patent Judges*.  
BARRY, *Administrative Patent Judge*.

**DECISION ON APPEAL**

A patent examiner rejected claims 1-26. The appellants appeal therefrom under 35 U.S.C. § 134(a). We reverse.

**BACKGROUND**

The invention at issue on appeal tests the "hardening" of a device driver. A hardened device driver is designed to be resilient against input/output faults. (Spec. at 1.) As with any aspect of a computer system, being able to test the hardening of a device driver is desirable. Such hardening can be tested by physically modifying device hardware to introduce faults for testing. According to the appellants, "[h]owever,

this is an expensive and time consuming task, and may in the end only give limited ability to test possible faults." (*Id.* at 2.)

Accordingly, the appellants' invention comprises a mechanism for intercepting device access calls from a device driver under test and an interface for configuring the mechanism to inject faults in response to the device access calls. A device access infrastructure maps the device access calls to intercept routines. (*Id.* at 3.) The appellants assert that their invention allows a variety of faults to be injected "in a controlled and repeatable fashion, which is typically not possible by modifying the device hardware." (*Id.* at 11.)

A further understanding of the invention can be achieved by reading the following claim.

20. A method of testing the hardening of a device driver, the method comprising intercepting device driver access calls from the device driver and injecting a fault in a device driver access according to a desired test pattern.

Claims 1-26 stand rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,864,653 ("Tavallaei") and U.S. Patent No. 5,001,712 ("Splett").

## OPINION

Rather than reiterate the positions of the examiner or the appellants *in toto*, we focus on the main point of contention therebetween. Noting that "Tavallaei discloses a system management central (SMC) that includes logic to monitor PCI cycles and to issue error signals in the event of a system error," (Examiner's Answer at 4), and that "[t]he SMC also isolates failed components by masking request, grant and interrupt lines for the failed device, see[], Tavallaei, abstract, lines 5-14," (*id.*), the examiner asserts, "the process of monitoring (monitoring or testing) PCI cycles and issuing error signals, grant and interrupt lines for the failed DEVICE is equivalent to Applicant's claimed invention wherein it is stated that 'testing device driver or testing device driver hardening'." (*Id.*) The appellants argue, "the Examiner has erroneously equated a hardware device to device driver software." (Reply Br. at 2.)

In addressing the point of contention, the Board conducts a two-step analysis. First, we construe the independent claims at issue to determine their scope. Second, we determine whether the construed claims would have been obvious.

### 1. CLAIM CONSTRUCTION

"Analysis begins with a key legal question — *what is the invention claimed?*"

*Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed.

Cir. 1987). "The general rule is, of course, that terms in the claim are to be given their ordinary and accustomed meaning." *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 989, 50 USPQ2d 1607, 1610 (Fed. Cir. 1999) (citing *Renishaw PLC v. Marposs Societa Per Azioni*, 158 F.3d 1243, 1249, 48 USPQ2d 1117, 1121 (Fed. Cir. 1998); *York Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572, 40 USPQ2d 1619, 1622 (Fed. Cir. 1996)). "It is well settled that dictionaries provide evidence of a claim term's 'ordinary meaning.'" *Inverness Med. Switz. GmbH v. Warner Lambert Co.*, 309 F.3d 1365, 1369, 64 USPQ2d 1926, 1930 (Fed. Cir. 2002) (citing *Texas Digital Sys. Inc. v. Telegenix Inc.*, 308 F.3d 1193, 1202, 64 USPQ2d 1812, 1818 (Fed. Cir. 2002); *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366, 62 USPQ2d 1658, 1662 (Fed. Cir. 2002)).

Here, claims 1 and 17-20 recite in pertinent part the testing of a "device driver." The ordinary meaning of the term "device driver" is "[a] software component that permits a computer system to communicate with a device." *Microsoft Press Computer Dictionary* 118 (2d ed. 1994) (copy attached). Giving the term its ordinary meaning, the limitations require testing a software component that permits a computer system to communicate with a hardware device.

## 2. OBVIOUSNESS DETERMINATION

Having determined what subject matter is being claimed, the next inquiry is whether the subject matter would have been obvious. "In rejecting claims under 35 U.S.C. Section 103, the examiner bears the initial burden of presenting a *prima facie* case of obviousness." *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993) (citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)). "A *prima facie* case of obviousness is established when the teachings from the prior art itself would . . . have suggested the claimed subject matter to a person of ordinary skill in the art." *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976)).

Here, Tavallaei discloses "[a] system management module (SMM) for a host server system[, which] includes a system management processor (SMP) connected to a system management local bus. The system management local bus connects to the system PCI bus through a system management central (SMC)." Abs., ll. 1-5. "The SMC includes logic to monitor PCI cycles and to issue error signals in the event of a system error. The SMC also isolates failed components by masking request, grant and interrupt lines for the failed device." *Id.* at 10-14.

Rather than testing a software component that permits a computer system to communicate with a hardware device, however, the SMC monitors such hardware devices. Specifically, "the SMC 200 monitors activity on the PCI bus 50 . . . and determines when a **device** on these busses fail." Col. 15, ll. 24-27 (emphasis added). "If the SMC discovers that a device has failed . . . , the SMP next checks . . . its configuration registers to determine if a spare device is present in the system which can assume the duties of the failed component. If no spare is available, the SMP isolates the failed **device** and cuts the request, grant and interrupt lines for the failed **device**. . . ." Col. 16, ll. 22-27 (emphases added). The devices monitored for failure include "various memory devices, . . . the CPU, bus bridges, hard disk controller, hard disk drives, and network interface cards. . . ." Col. 7, ll. 51-54.

The examiner does not allege, let alone show, that the addition of Splett cures the aforementioned deficiency of Tavallaei. Furthermore, the former reference also "tests error detection and recovery logic included in functional **hardware**," col. 3, ll. 19-21, rather than testing a software component that permits a computer system to communicate with a hardware device. Absent a teaching or suggestion of testing a software component that permits a computer system to communicate with a hardware device, we are unpersuaded of a *prima facie* case of obviousness. Therefore, we


reverse the obviousness rejection of claim 1; of claims 2-16, which depend therefrom;  
of claims 17-20; and of claims 21-26, which depend from claim 20.

#### CONCLUSION

In summary, the rejection of claims 1-16 under § 103(a) is reversed.

  
KENNETH W. HAIRSTON  
Administrative Patent Judge

  
LEE E. BARRETT  
Administrative Patent Judge

  
LANCE LEONARD BARRY  
Administrative Patent Judge

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Appeal No. 2003-1628  
Application No. 09/097,468

Page 9

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